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| <p>(30) Priority:</p> <p>(43) Date of application publication: 21.06.86</p> <p>(84) Designated contracting states:</p> | <p>(71) Applicant: NEC CORP</p> <p>(72) Inventor: MATSUI SHINJI MORI KATSUMI ASATA SUSUMU</p> <p>(74) Representative:</p> |
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(54) FORMATION OF PATTERN

(57) Abstract:

PURPOSE: To simplify a process by directly etching silicon or an silicon nitride thin-film through electron-beam assisting etching.

CONSTITUTION: XeF₂202 is introduced into a reaction-gas material housing chamber 201, and a substrate 205, to an upper layer thereof an Si thin-film is formed, is set to a sample base 204. An electron-beam projection system 210 and a sample chamber 208 are evacuated up to a high vacuum of approximately 10⁻⁵ Torr or higher. A reaction gas material XeF₂ exists as a solid in atmospheric air but easily sublimates by an evacuation, and passes through a piping 203, and the inside of a by-sample chamber 206 is filled with XeF₂ as a reaction gas. The substrate 205, to the upper layer thereof the Si thin-film is shaped, is irradiated by electron beams focussed through a pin hole 207, and the Si thin-film at a position irradiated is etched.

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